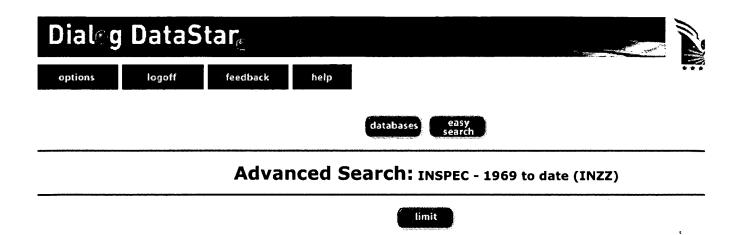
L Number	Hits	Search Text	DB	Time stamp
2	1	6789039.pn. and point and light	USPAT	2004/11/03 13:43
3	1	6789039.pn.	USPAT	2004/11/03 13:43
4	18	("4381608" "4490849" "4631598" "4639878" "4653104" "4945493" "5699444" "5764516" "5832106" "5870490"	USPAT	2004/11/03 13:46
		"5933921" "6009189" "6101268" "6101455" "6138196"		
		"6219063" "6249234" "6359647").PN.		
5	0	6789039.URPN.	USPAT	2004/11/03 13:43
6	Ö	("4381608" "4490849" "4631598" "4639878" "4653104"	USPAT	2004/11/03 13:52
		"4945493" "5699444" "5764516" "5832106" "5870490"		
		"5933921" "6009189" "6101268" "6101455" "6138196"		
	•	"6219063" "6249234" "6359647").PN. and (((moving or		
		movement or displacing or displacement or motion) near4 (point or focus or spot or dot) near4 (light or laser or ray or		
		beam)) with (((flat or plane or planar) near3 (surface or extent		
		or expanse)) or (floor or wall or ceiling)))		
7	0	("4381608" "4490849" "4631598" "4639878" "4653104"	USPAT	2004/11/03 13:53
		"4945493" "5699444" "5764516" "5832106" "5870490"		
		"5933921" "6009189" "6101268" "6101455" "6138196"		
		"6219063" "6249234" "6359647").PN. and ((moving or		
		movement or displacing or displacement or motion) near4		
		(point or focus or spot or dot) near4 (light or laser or ray or beam)) and (((flat or plane or planar) near3 (surface or extent		
ļ		or expanse)) or (floor or wall or ceiling))		,
8	0	("4381608" "4490849" "4631598" "4639878" "4653104"	USPAT	2004/11/03 13:54
		"4945493" "5699444" "5764516" "5832106" "5870490"		
		"5933921" "6009189" "6101268" "6101455" "6138196"		
		"6219063" "6249234" "6359647").PN. and ((moving or		
		movement or displacing or displacement or motion) near4 (point or focus or spot or dot) near4 (light or laser or ray or		
		beam))		
9	300	((calibrat\$3 or modif\$7 or adjust\$4 or alter\$5) near3 (camera	USPAT;	2004/11/03 14:00
		or imager or (photo\$detector or (imaging adj (device or	US-PGPUB;	
		apparata or apparatus))))) and ((moving or movement or	EPO; JPO;	
		displacing or displacement or motion) near4 (point or focus or	DERWENT; IBM_TDB	
10	102	spot or dot) near4 (light or laser or ray or beam)) ((calibrat\$3 or modif\$7 or adjust\$4 or alter\$5) near3 (camera	USPAT;	2004/11/03 14:06
10	102	or imager or (photo\$detector or (imaging adj (device or	US-PGPUB;	255 11 11 155 1 1155
		apparata or apparatus))))) and ((moving or movement or	EPO; JPO;	
		displacing or displacement or motion) near4 (point or focus or	DERWENT;	
		spot or dot) near4 (light or laser or ray or beam)) and (relat\$3	IBM_TDB	
		near3 (camera or imager or (photo\$detector or (imaging adj (device or apparata or apparatus)) near3 (position or location		,
		or orientation or placement))))		
-	189	73/1.01.ccls.	USPAT;	2004/11/02 09:45
			US-PGPUB	
- [103	73/1.75.ccls.	USPAT;	2004/11/02 09:45
	220	70/4 70 pala	US-PGPUB	2004/11/02 09:45
-	220	73/1.79.ccls.	USPAT; US-PGPUB	2004/11/02 09.45
_	367	348/135.ccls.	USPAT:	2004/11/02 09:46
			US-PGPUB	
-	536	356/614.ccls.	USPAT;	2004/11/02 09:46
			US-PGPUB	0004/44/00 00 40
-	293	382/286.ccls.	USPAT; US-PGPUB	2004/11/02 09:46
	244	382/289.ccls.	USPAT;	2004/11/02 09:46
_	277	302/203.003.	US-PGPUB	200 17 1 1702 00: 10
-	102	702/1.ccls.	USPAT;	2004/11/02 09:46
			US-PGPUB	
-	244	702/33.ccls.	USPAT;	2004/11/02 09:46
	440	703/40 colo	US-PGPUB USPAT:	2004/11/02 00:46
-	113	702/40.ccls.	US-PGPUB	2004/11/02 09:46
_	411	702/85.ccls.	USPAT;	2004/11/02 09:46
	'''		US-PGPUB	
-	311	702/94.ccls.	USPAT;	2004/11/02 09:47
	L		US-PGPUB	<u> </u>

-	191	702/95.ccls.	USPAT;	2004/11/02 09:47
	400	700/405	US-PGPUB	2004/44/00 00:47
-	122	702/105.ccls.	USPAT; US-PGPUB	2004/11/02 09:47
	256	702/127.ccls.	USPAT;	2004/11/02 09:47
_	648	702/150.ccls.	US-PGPUB USPAT;	2004/11/02 09:47
			US-PGPUB	2004/11/02 00:41
-	257	702/151.ccls.	USPAT; US-PGPUB	2004/11/02 09:47
-	211	702/152.ccls.	USPAT;	2004/11/02 09:47
	173	702/153.ccls.	US-PGPUB USPAT;	2004/11/02 09:48
		702/100.003.	US-PGPUB	2004/ 1/02 03:40
-	0	702/85.ccls. and 73.101.ccls.	USPAT; US-PGPUB	2004/11/02 09:48
-	0	702/85.ccls. and 73.175.ccls.	USPAT;	2004/11/02 09:49
	0	702/85.ccls. and 73.179.ccls.	US-PGPUB USPAT;	2004/11/02 09:49
-		702703.ccis. and 73.179.ccis.	US-PGPUB	2004/11/02 09.49
-	0	702/85.ccls. and 356/614.ccls.	USPAT; US-PGPUB	2004/11/02 09:49
_	0	702/85.ccls. and 382/286.ccls.	USPAT;	2004/11/02 09:49
	0	702/85.ccls. and 382/289.ccls.	US-PGPUB USPAT;	2004/11/02 09:49
-		702/03.ccis. and 302/203.ccis.	US-PGPUB	2004/11/02 09.49
-	0	702/85.ccls. and 702/40.ccls.	USPAT; US-PGPUB	2004/11/02 09:50
-	0	702/85.ccls. and 702/152.ccls.	USPAT;	2004/11/02 09:50
	1	702/95 colo. and 349/125 colo.	US-PGPUB USPAT;	2004/11/02 09:50
-	1	702/85.ccls. and 348/135.ccls.	US-PGPUB	2004/11/02 09.50
-	2	702/85.ccls. and 702/1.ccls.	USPAT; US-PGPUB	2004/11/02 09:51
-	4	702/85.ccls. and 702/33.ccls.	USPAT;	2004/11/02 09:51
	14	702/85.ccls. and 702/94.ccls.	US-PGPUB USPAT;	2004/11/02 09:53
· ·	14	702/03.CCIS. and 702/94.CCIS.	US-PGPUB	2004/11/02 09.55
-	5	702/85.ccls. and 702/95.ccls.	USPAT; US-PGPUB	2004/11/02 09:56
· -	6	702/85.ccls. and 702/105.ccls.	USPAT;	2004/11/02 09:56
	5	702/85.ccls. and 702/127.ccls.	US-PGPUB USPAT;	2004/11/02 09:56
]	3	702/03.ccis. and 702/127.ccis.	US-PGPUB	
-	10	702/85.ccls. and 702/150.ccls.	USPAT; US-PGPUB	2004/11/02 09:56
-	1	702/85.ccls. and 702/151.ccls.	USPAT;	2004/11/02 09:57
_	1	702/85.ccls. and 702/153.ccls.	US-PGPUB USPAT:	2004/11/02 09:59
			US-PGPUB	
-	0	((camera or spectrograph or imager) near3 (calibrat\$3 or scal\$3)) and ((light or ray or beam) near3 (point or spot or	USPAT; US-PGPUB	2004/11/03 07:29
		focus)) and (frame with "field of view") and ((plural\$3 or	00-1 01 02	
		several or multiple or some or many or group) near3 (camera or spectrograph or imager)) and (relat\$3 near3 (position or		
		location or siting or site))		
-	0	((camera or imager) near3 (calibrat\$3 or scal\$3)) and ((light or ray or beam) near5 (point or spot or focus) near5 (moving or	USPAT; US-PGPUB	2004/11/02 10:13
	1	motion or displacement)) and ((flat or planar or plane) near3	30-1 01 00	
		(surface or expanse)) and (frame with "field of view") and ((plural\$3 or several or multiple or some or many or group)		
		near3 (camera or imager)) and (relat\$3 near3 (position or		
	Ļ	location))		

Ceamera neard calibrat\$3) and (light or ray or beam) with (point or spot or focus) with (moving or motion or displacement) with (flat or planar or plane) with (surface or expanse)) and (frame with flet of view) and (floural\$3 or several or multiple or some or the flow of view) and (floural\$3 or several or multiple or some or motion or displacement) with (flat or planar or plane) with (surface or expanse))					
camera near3 calibrat\$3 4 (camera near3 calibrat\$3) and ((light or ray or beam) with (point or spot or focus) with (moving or motion or displacement) with (filed or planar or plane) with (surface or expanse); 154,25268" "5548327" "5805198" "6084423" USPAT; 2004/11/02 10:28 USPAT USPAT; 2004/11/02 10:28 USPAT; 2004/11/02 10:29 USPAT; 2004/11/03 07:39 USPAT; 2004	-	0	displacement) with (flat or planar or plane) with (surface or expanse)) and (frame with "field of view") and ((plural\$3 or several or multiple or some or many or group) near3 (camera	USPAT; US-PGPUB	2004/11/02 10:16
4 (camera near3 calibrat\$3) and ((light or ray or beam) with (point or spot or focus) with (moving or motion or displacement) with (flat or planar or plane) with (surface or expanse)) 6 ("\$227985" "5432526" "5546327" "5805196" "6064423" USPAT USPAT 2004/11/02 10:23 2004/11/03 07:39 2004/11/03 07:3	-	2315			2004/11/02 10:15
6 ("5227985" "5432526" "5546327" "5805196" "6064423" 8	-	4	(point or spot or focus) with (moving or motion or displacement) with (flat or planar or plane) with (surface or	USPAT;	2004/11/02 10:26
(calibrat53 near4 (camera or cod or imager or (imaging near3) (device or apparatus or appliance or module or component or element)))) and (imoving or displac55 or position33 or locat33 or reposition53 or relocat33) near4 (light or ray or beam) near4 (point or area or region or dot or spot)) with (ion or atop or upon or across) near4 (flat or plane or planar) near4 (surface or extent or extention or expanse or expansion)). 437 (device or apparatus or appliance or module or component or element)))) and (imoving or displac55 or position53 or locat33 or reposition53 or relocat33) near4 (light or ray or beam) near4 (point or area or region or dot or spot)) with (ion or atop or upon or across) near4 (flat or plane or planar) near4 (surface or extent or extention or expanse or expansion)). 437 (device or apparatus or appliance or module or component or element)))) and (imoving or displac55 or position53 or locat33) or reposition53 or relocat33) near4 (light or ray or beam) near4 (point or area or region or dot or spot)). 11 (calibrat53 near4 (camera or cod or imager or (imaging near3) (device or apparatus or appliance or module or component or element)))) and (imoving or displac55 or position53 or locat33) or reposition53 or relocat33) near4 (light or ray or beam) near4 (point or area or region or dot or spot). 12 (Calibrat53 near4 (camera or cod or imager or (imaging near3) (device or apparatus or appliance or module or component or element)))) and (imoving or displac55 or position53 or locat33) or reposition53 or relocat35) near4 (light or ray or beam) near4 (light or ray or beam) near4 (light or ray or beam)) near4 (light or ray or beam) near4 (light or ray or beam) near4 (light or ray or beam)) near4 (light or ray or beam) near4 (light or ray or beam)) near4 (light or ray or beam) near4 (light or ray or leam))) and (light or primary or initial or plural or plurality or several or multiple or some or many) near3 (light or some or many) near3 (light or some or many) near4 (light or ray or beam) near4 (light or r	-	6	("5227985" "5432526" "5546327" "5805196" "6064423"	USPAT	2004/11/02 10:23
USPĀT:	-	-	(calibrat\$3 near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or	USPAT; US-PGPUB; EPO; JPO; DERWENT;	
(calibrat\$3 near4 (camera or cod or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((moving or displac\$5 or position\$3 or locat\$3 or reposition\$3 or relocat\$3) near4 (light or ray or beam) near3 (device or apparatus or appliance or module or component or element)))) and ((moving or displac\$5 or position\$3 or locat\$3 or reposition\$3 or reposition\$3 or relocat\$3) near4 (light or ray or beam) near4 (point or area or region or dot or spot) with ((flat or plane or planar) near4 (surface or extent or extention or expanse or expansion)) 437 (calibrat\$3 near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((moving or displac\$5 or position\$3 or locat\$3 or reposition\$3 or relocat\$3) near4 (light or ray or beam) near3 (device or apparatus or appliance or module or component or element)))) and ((moving or displac\$5 or position\$3 or locat\$3 or reposition\$3 or relocat\$3) near4 (light or ray or beam) near4 (point or area or region or dot or spot or (flat ad) surface))) and ((first or primary or initial or plurality or several or multiple or some or many) near4 (point or area or region or dot or spot or (flat ad) surface))) and ((first or primary or initial or plural or plurality or several or multiple or some or many) near4 (point or area or region or dot or spot or (flat ad) surface))) and (light or ray or beam) near4 (point or area or region or dot or spot or (flat ad) surface)) and (first or primary or initial or plural or plurality or several or multiple or some or many) near4 (point or area or region or dot or spot or (flat ad) surface)) and (first or primary or initial or plural or plurality or several or multiple or some or many) near4 (point or area or region or dot or spot or (flat ad) surface))) and (first or primary or initial or plurality or several or multiple or some or many) near4 (point or area or region or dot or spot or (flat ad) surface))) (calibrat\$3 near4 (first or primary or init	-	0	(device or apparatus or appliance or module or component or element)))) and ((moving or displac\$5 or position\$3 or locat\$3 or reposition\$3 or relocat\$3) near4 (light or ray or beam) near4 (point or area or region or dot or spot)) with ((on or atop or upon or across) near4 (flat or plane or planar) near4 (surface	USPAT; US-PGPUB; EPO; JPO; DERWENT;	2004/11/03 07:39
(device or apparatus or appliance or module or component or element)))) and ((moving or displac\$5 or position\$3 or locat\$3) near4 (light or ray or beam) near4 (calibrat\$3 near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((moving or displac\$5 or position\$3 or locat\$3) near4 (light or ray or beam) near4 (calibrat\$3 near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((moving or displac\$5 or position\$3 or locat\$3) near4 (light or ray or beam) near4 (point or area or region or dot or spot or (flat adj surface))) 78 (calibrat\$3 near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((moving or displac\$5 or position\$3 or locat\$3) or reposition\$3 or relocat\$3) near4 (light or ray or beam) near4 (point or area or region or dot or spot or (flat adj surface))) and ((first or primary or initial or plural o	-	437	(calibrat\$3 near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((moving or displac\$5 or position\$3 or locat\$3 or reposition\$3 or relocat\$3) near4 (light or ray or beam) near4	US-PGPUB; EPO; JPO; DERWENT;	2004/11/03 07:43
437 (calibrat\$3 near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((moving or displac\$5 or position\$3 or locat\$3 or reposition\$3 or relocat\$3) near4 (light or ray or beam) near4 (point or area or region or dot or spot or (flat adj surface))) 78 (calibrat\$3 near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((moving or displac\$5 or position\$3 or locat\$3 or reposition\$3 or relocat\$3) near4 (light or ray or beam) near4 (point or area or region or dot or spot or (flat adj surface))) and ((first or primary or initial or plural or plurality or several or multiple or some or many) near3 (frame or window)) 8 (calibrat\$3 near4 (first or primary or initial or plural or plurality or several or multiple or some or many) near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((first or primary or initial or plural or plurality or several or multiple or some or many) near4 (point or area or region or dot or spot or (flat adj surface))) and ((first or primary or initial or plural or plurality or several or multiple or some or many) near4 (ight or ray or beam) near4 (point or area or ccd or imager or (imaging near3 (device or apparatus or appliance or or module or component or element))) and (moving or displac\$5 or position\$3 or relocat\$3) near4 (first or primary or initial or plural or plurality or several or multiple or some or many) near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or or module or component or element))) and (device or apparatus or appliance or module or component or element))) and (moving or displac\$5 or nealy\$4) near4 relat\$3 near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element))) near4 (point or location or location or coordinate))	-		(calibrat\$3 near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((moving or displac\$5 or position\$3 or locat\$3 or reposition\$3 or relocat\$3) near4 (light or ray or beam) near4 (point or area or region or dot or spot)) with ((flat or plane or planar) near4 (surface or extent or extention or expanse or	US-PGPUB; EPO; JPO; DERWENT;	2004/11/03 07:39
(calibrat\$3 near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((moving or displac\$5 or position\$3 or locat\$3 or reposition\$3 or relocat\$3) near4 (light or ray or beam) near4 (point or area or region or dot or spot or (flat adj surface))) and ((first or primary or initial or plural or plurality or several or multiple or some or many) near3 (frame or window)) 8 (calibrat\$3 near4 (first or primary or initial or plural or plurality or several or multiple or some or many) near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((first or primary or initial or plural or plurality or several or multiple or some or many) near4 (light or ray or beam) near4 (point or area or region or dot or spot or (flat adj surface))) and ((first or primary or initial or plural or plurality or several or multiple or some or many) near3 (frame or window)) 65 (calibrat\$3 near4 (first or primary or initial or plural or plurality or several or multiple or some or many) near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((determin\$5 or measur\$5 or analy\$4) near4 relat\$3 near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element))) and ((determin\$5 or measur\$5 or analy\$4) near4 relat\$3 near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element))) near4 (position or location or coordinate)))	-	437	(calibrat\$3 near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((moving or displac\$5 or position\$3 or locat\$3 or reposition\$3 or relocat\$3) near4 (light or ray or beam) near4	US-PGPUB; EPO; JPO; DERWENT;	2004/11/03 07:44
65 (calibrat\$3 near4 (first or primary or initial or plurality or several or multiple or some or many) near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((moving or displac\$5 or position\$3 or locat\$3 or reposition\$3 or relocat\$3) near4 (light or ray or beam) near4 (point or area or region or dot or spot or (flat adj surface))) and ((first or primary or initial or plural or plurality or plurality or several or multiple or some or many) near3 (frame or window)) (calibrat\$3 near4 (first or primary or initial or plurality or several or multiple or some or many) near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((determin\$5 or measur\$5 or analy\$4) near4 relat\$3 near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element))) near4 (position or location or coordinate)))	-	78	(calibrat\$3 near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((moving or displac\$5 or position\$3 or locat\$3 or reposition\$3 or relocat\$3) near4 (light or ray or beam) near4 (point or area or region or dot or spot or (flat adj surface))) and ((first or primary or initial or plural or plurality or several or	USPAT; US-PGPUB; EPO; JPO; DERWENT;	2004/11/03 07:46
near3 (frame or window)) (calibrat\$3 near4 (first or primary or initial or plural or plurality or several or multiple or some or many) near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((determin\$5 or measur\$5 or analy\$4) near4 relat\$3 near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)) near4 (position or location or coordinate)))	-	8	(calibrat\$3 near4 (first or primary or initial or plural or plurality or several or multiple or some or many) near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((moving or displac\$5 or position\$3 or locat\$3 or reposition\$3 or relocat\$3) near4 (light or ray or beam) near4 (point or area or region or dot or spot or (flat adj surface))) and ((first or primary or initial	US-PGPUB; EPO; JPO; DERWENT;	2004/11/03 07:49
	-		near3 (frame or window)) (calibrat\$3 near4 (first or primary or initial or plural or plurality or several or multiple or some or many) near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)))) and ((determin\$5 or measur\$5 or analy\$4) near4 relat\$3 near4 (camera or ccd or imager or (imaging near3 (device or apparatus or appliance or module or component or element)) near4 (position or location or coordinate)))	US-PGPUB; EPO; JPO; DERWENT;	2004/11/03 09:34

	3	(5829444, 5662111, "5529070").pn.	USPAT	2004/11/03 09:36
1_	1	(5829444, 5662111, "5529070").pn. and ((camera or imager or	USPAT	2004/11/03 09:38
	•	(imaging adj (device or apparatus or apparata))) near3	001711	200 17 1 1700 00.00
		calibrat\$3)		
_	50	73/\$.ccls. and ((camera or imager or (imaging adj (device or	USPAT:	2004/11/03 09:39
		apparatus or apparata))) near3 calibrat\$3)	US-PGPUB	200
-	563	348/\$.ccls. and ((camera or imager or (imaging adj (device or	USPAT:	2004/11/03 09:39
		apparatus or apparata))) near3 calibrat\$3)	US-PGPUB	
-	148	396/\$.ccls. and ((camera or imager or (imaging adj (device or	USPAT:	2004/11/03 09:39
		apparatus or apparata))) near3 calibrat\$3)	US-PGPUB	
l -	107		USPAT;	2004/11/03 09:43
		apparatus or apparata))) near3 calibrat\$3)	US-PGPUB	
-	0		USPAT;	2004/11/03 12:18
		apparatus or apparata))) near3 calibrat\$3) and ((camera or	US-PGPUB	
		imager or (imaging adj (device or apparatus or apparata)))		
	Ì	near3 relat\$3 near3 (position or location or site or placement))		
-	6	1	USPAT;	2004/11/03 09:46
		apparatus or apparata))) near3 calibrat\$3)	US-PGPUB	
-	24		USPAT;	2004/11/03 09:49
		apparatus or apparata))) near3 calibrat\$3) and ((camera or	US-PGPUB	
		imager or (imaging adj (device or apparatus or apparata)))		,
		near3 relat\$3 near3 (position or location or site or placement))		
-	6	73/\$.ccls. and ((camera or imager or (imaging adj (device or	USPAT;	2004/11/03 09:57
		apparatus or apparata))) near3 calibrat\$3) and ((camera or	US-PGPUB	
		imager or (imaging adj (device or apparatus or apparata)))		
	4.7	near3 relat\$3 near3 (position or location or site or placement))	LICDAT.	2004/44/02 00:50
-	17	1 ((((((((((((((USPAT; US-PGPUB	2004/11/03 09:58
		apparatus or apparata))) near3 calibrat\$3) and ((camera or	US-PGPUB	
		imager or (imaging adj (device or apparatus or apparata))) near3 relat\$3 near3 (position or location or site or placement))		
	86	348/\$.ccls. and ((camera or imager or (imaging adj (device or	USPAT;	2004/11/03 09:58
1	80	apparatus or apparata))) near3 calibrat\$3) and ((camera or	US-PGPUB	2004/11/05 05.50
		imager or (imaging adj (device or apparatus or apparata)))	001010	
		near3 relat\$3 near3 (position or location or site or placement))		
_	60	((method\$5 or process or procedure or routine or algorithm)	USPAT:	2004/11/03 12:22
		near5 (camera or imager or (imaging adj (device or apparatus	US-PGPUB;	
		or apparata))) near3 calibrat\$3) and ((determin\$5 or	EPO: JPO:	
		measur\$5) near5 (camera or imager or (imaging adj (device or	DERWENT;	
		apparatus or apparata))) near3 relat\$3 near3 (position or	IBM TDB	
		location or site or placement))	_	

search



Search history:

Publication types

h

Language of publication

No.	Database	Search term	Info added since	Results	
1		Geometric ADJ camera ADJ calibration ADJ theory AND experiments	unrestricted	1	show titles

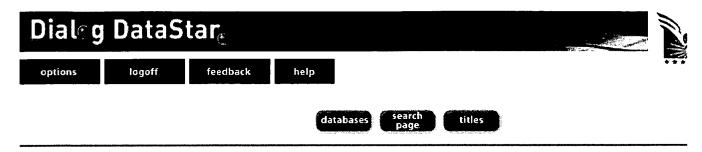
whole document

hide | delete all search steps... | delete individual search steps...

Enter your search term(s): Search tips

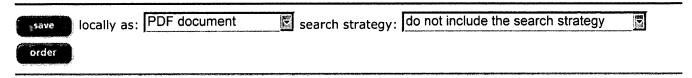
Information added since: or: none (YYYYMMDD)
Select special search terms from the following list(s):
Classification codes A: Physics, 0-1
Classification codes A: Physics, 2-3
Classification codes A: Physics, 4-5
Classification codes A: Physics, 6
Classification codes A: Physics, 7
Classification codes A: Physics, 8
Classification codes A: Physics, 9
Classification codes B: Electrical & Electronics, 0-5
Classification codes B: Electrical & Electronics, 6-9
Classification codes C: Computer & Control
Classification codes D: Information Technology
Classification codes E: Manufacturing & Production
Treatment codes
INSPEC sub-file

eb c b cb



Document

Select the documents you wish to <u>save</u> or <u>order</u> by clicking the box next to the document, or click the link above the document to order directly.



document 1 of 1 Order Document

INSPEC - 1969 to date (INZZ)

Accession number & update

4794776, B9411-6140C-601, C9411-5260B-402; 941026.

Title

Geometric camera calibration: theory and experiments.

Author(s)

Kachi-D; Tu-X-W.

Author affiliation

Centre de Recherches de Royallieu, Compiegne, France.

Source

Proceedings of 1994 IEEE International Symposium on Industrial Electronics (ISIE'94), Santiago, Chile, 25-27 May 1994.

Sponsors: IEEE Ind. Electron. Soc., Catholic Univ. Chile, IEEE Chile Sect., Chilean Assoc. Autom.

Control.

In: p.298-303, 1994.

ISSN

ISBN: 0-7803-1961-3.

Publication year

1994.

Language

ΕÑ.

Publication type

CPP Conference Paper.

Treatment codes

T Theoretical or Mathematical; X Experimental.

Abstract

It is known from **geometric** optics that any system of lenses can be approximated by a system which realizes a perspective projection of a 3D scene onto a 2D plate. Projective geometry is an efficient tool to investigate such an image forming system. This paper treats the problem of calibrating cameras using this tool. In this work, a new formulation of calibrating a moving **camera** is presented, and is based on the absolute conic properties. The projective invariance of the absolute conic under rigid motion ensures that its image is independent of **camera** position, and depends only on the intrinsic parameters of the **camera**. The **camera calibration** is computed in two steps. First, the estimation of the coefficients of the epipolar transformation is estimated. The computation of the absolute conic image is based on the pole and polar of the conic. Then, relations between intrinsic parameters and coefficients of the absolute conic image are then deduced. Both computer-generated and real data are included in **experiments**, which illustrates how the method works. This technique is integrated in an

h eb c c c

iterative filtering scheme. (13 refs).

Descriptors

<u>calibration</u>; <u>cameras</u>; <u>computer-vision</u>; <u>filtering-and-prediction-theory</u>; <u>geometrical-optics</u>; <u>iterative-methods</u>; <u>motion-estimation</u>.

Keywords

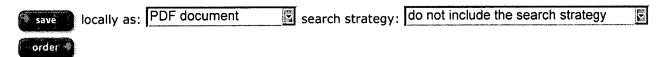
h

geometric camera calibration; geometric optics; projective geometry; image forming system; absolute conic properties; rigid motion; epipolar transformation; absolute conic image; real data; computer generated data; iterative filtering scheme.

Classification codes

B6140C	(Optical information and image processing).
B7130	(Measurement standards and calibration).
B0290F	(Interpolation and function approximation).
B7230G	(Image sensors).
C5260B	(Computer vision and picture processing).
C1250	(Pattern recognition).
C4130	(Interpolation and function approximation).

COPYRIGHT BY Inst. of Electrical Engineers, Stevenage, UK



Top - News & FAQS - Dialog

© 2004 Dialog



Membership Publications/Services Standards Conferences Careers/Jobs				
	Welcome United States Patent and Trader	mark Office		
Help FAQ Terms IEE	E Peer Review Quick Links	» I		
Pendigle EEE of emodely	Thursday Sull Asya Sagab Bushshima	<u>Help</u>		
O- Home	Try our New Full-text Search Prototype ©			
O- What Can I Access?		Const. Online		
C- Log-out	 Enter keywords in one or more text boxes. Select the fields to search for each keyword. 	Search Options: Select publication types:		
Tebles of Contents	Select search operators when using multiple keywords.	- · · · · · · · · · · · · · · · · · · ·		
O- Journals	4) Limit the results by selecting Search Options.	☑ IEEE Journals ☑ IEE Journals		
& Magazines	5) Click Search. See <u>Search Examples</u>	✓ IEEE Conference proceedings		
O- Conference Proceedings	camera <phrase> calil In: All Fields</phrase>	☑ IEE Conference proceedings		
O- Standards	And 🖫	☑ IEEE Standards		
Sinch				
O- By Author	camera <phrase> rela In: All Fields</phrase>	Select years to search:		
O- Basic	And 🔽	From year: 1950 🗟 to 2002		
O- Advanced	All Fields	Organize search results by:		
O- CrossRef	In: All Fields			
Mander Savices :: &	Search Clear	Sort by: Relevance In: Descending order		
O- Join IEEE	Note: This function returns plural and suffixed forms of the	List 15 Results per page		
C Establish IEEE Web Account	keyword(s).			
O- Access the				
IEEE Member Digital Library				
विवर्ध विवासिक्षीय 🦣 🦣				
O- Access the				
IEEE Enterprise File Çabinet				

Home | Log-out | Journals | Conference Proceedings | Standards | Search by Author | Basic Search | Advanced Search | Join IEEE | Web Account |
New this week | OPAC Linking Information | Your Feedback | Technical Support | Email Alerting | No Robots Please | Release Notes | IEEE Online
Publications | Help | FAQ| Terms | Back to Top

Membership Publications/Services Standards Conferences Careers/Jobs



IEEE)	Welcome United States Patent and Trademark Office	1
Help FAQ Terms IEE	EE Peer Review Quick Links	» Se:
Welcome to IEEE Xplore* - Home - What Can I Access? - Log-out	Your search matched 0 of 1088345 documents. A maximum of 500 results are displayed, 15 to a page, sorted by I Descending order. Refine This Search:	Relevance
Tables of Contents	You may refine your search by editing the current search expressionew one in the text box.	n or enteri
Journals & Magazines Conference Proceedings	camera <phrase> calibration<and>camera <phrase> Search</phrase></and></phrase>	
- Standards	Results Key: JNL = Journal or Magazine CNF = Conference STD = Standard	
Search By Author Basic Advanced CrossRef	Results: No documents matched your query.	
Member Services Join IEEE Establish IEEE Web Account Access the IEEE Member Digital Library		
O Access the IEEE Enterprise File Cabinet		

Print Format

Home | Log-out | Journals | Conference Proceedings | Standards | Search by Author | Basic Search | Advanced Search | Join IEEE | Web Account |
New this week | OPAC Linking Information | Your Feedback | Technical Support | Email Alerting | No Robots Please | Release Notes | IEEE Online
Publications | Help | FAQ | Terms | Back to Top

Copyright © 2004 IEEE — All rights reserved

h eee e eee g e ch e ch e e c e h e c b



Membership Publica	ations/Services Standards Conferences Careers/Jobs	
IEEE)	Welcome United States Patent and Trade	emark Office
Help FAQ Terms IEE	E Peer Review Quick Links	» i
Welcome to IEEE Xplores - Home - What Can	Try our New Full-text Search Prototype GO	<u>Help</u>
I Access?	1) Enter keywords in one or more text boxes.	Search Options:
O- Log-out	2) Select the fields to search for each keyword.	Select publication types:
Tables of Contents — Journals	3) Select search operators when using multiple keywords.4) Limit the results by selecting Search Options.5) Click Search. See <u>Search Examples</u>	☑ IEEE Journals ☑ IEE Journals
& Magazines		✓ IEEE Conference proceedings
Conference Proceedings	camera <phrase> calii In: All Fields</phrase>	IEE Conference proceedings
O- Standards	And F	☑ IEEE Standards
Search	brakeley In: Author	Select years to search:
O- By Author O- Basic	And 🔄	From year: 1950 🕏 to 2002
O- Advanced O- CrossRef	In: All Fields	Organize search results by:
Member Services	Search Clear	Sort by: Relevance
O- Join IEEE O- Establish IEEE Web Account	Note: This function returns plural and suffixed forms of the keyword(s).	List 15 Results per page
O- Access the IEEE Member Digital Library		
O- Access the IEEE Enterprise File Cabinet		

Home | Log-out | Journals | Conference Proceedings | Standards | Search by Author | Basic Search | Advanced Search | Join IEEE | Web Account |
New this week | OPAC Linking Information | Your Feedback | Technical Support | Email Alerting | No Robots Please | Release Notes | IEEE Online
Publications | Help | FAQ| Terms | Back to Top

Membership Publications/Services Standards Conferences Careers/Jobs



EEE	Welcome United States Patent and Trademark Office	
Help FAQ Terms IEE	EE Peer Review Quick Links	» Se
Welcome to IEEE Xplores - Home - What Can I Access? - Log-out Tables of Contents - Journals	Your search matched 0 of 1088345 documents. A maximum of 500 results are displayed, 15 to a page, sorted by ReDescending order. Refine This Search: You may refine your search by editing the current search expression new one in the text box. camera <phrase> calibration<and> (brakeley<in>all Search</in></and></phrase>	
& Magazines - Conference Proceedings - Standards	Check to search within this result set Results Key: JNL = Journal or Magazine CNF = Conference STD = Standard	
Search	Results: No documents matched your query.	
Member Services - Join IEEE - Establish IEEE Web Account - Access the IEEE Member Digital Library IEEE Enterprise - Access the IEEE Enterprise File Cabinet		•

Print Format

Home | Log-out | Journals | Conference Proceedings | Standards | Search by Author | Basic Search | Advanced Search | Join IEEE | Web Account |
New this week | OPAC Linking Information | Your Feedback | Technical Support | Email Alerting | No Robots Please | Release Notes | IEEE Online
Publications | Help | FAQ| Terms | Back to Top

Copyright © 2004 IEEE — All rights reserved

h eee e eee g e ch e ch e e c e h e c b

Membership Publications/Services Standards Conferences Careers/Jobs



	Welcome United States Patent and Tra	ademark Office
Welcome to IEEE Xplores - Home - What Can I Access?	Try our New Full-text Search Prototype GO 1) Enter keywords in one or more text boxes.	Help
Tables of Contents - Journals & Magazines - Conference Proceedings - Standards	 2) Select the fields to search for each keyword. 3) Select search operators when using multiple keywords. 4) Limit the results by selecting Search Options. 5) Click Search. See <u>Search Examples</u> camera <phrase> calii In: All Fields</phrase> 	Select publication types: IEEE Journals IEEE Conference proceedings IEE Conference proceedings IEEE Standards
Search - By Author - Basic - Advanced - CrossRef	kelliher In: Author And In: All Fields	Select years to search: From year: 1950 to 2002 Organize search results by:
Member Services - Join IEEE - Establish IEEE - Web Account - Access the - IEEE Member - Digital Library	Search Clear Note: This function returns plural and suffixed forms of the keyword(s).	Sort by: Relevance In: Descending order List 15 Results per page
IEEE Enterprise - Access the IEEE Enterprise File Cabinet		

Home | Log-out | Journals | Conference Proceedings | Standards | Search by Author | Basic Search | Advanced Search | Join IEEE | Web Account |
New this week | OPAC Linking Information | Your Feedback | Technical Support | Email Alerting | No Robots Please | Release Notes | IEEE Online
Publications | Help | FAQ | Terms | Back to Top

Membership Publications/Services Standards Conferences Careers/Jobs



EEE	Welcome United States Patent and Trademark Office
Help FAQ Terms IEE	E Peer Review Quick Links Se
Welcome to IEEE Xplores - Home - What Can I Access? - Log-out Tables of Contents - Journals & Magazines - Conference Proceedings	Your search matched 0 of 1088345 documents. A maximum of 500 results are displayed, 15 to a page, sorted by Relevance Descending order. Refine This Search: You may refine your search by editing the current search expression or enterinew one in the text box. Camera < phrase > calibration < and > (kelliher < in > au) Search Check to search within this result set Results Key:
O- Standards	JNL = Journal or Magazine CNF = Conference STD = Standard
Search By Author Basic Advanced CrossRef	Results: No documents matched your query.
Member Services Join IEEE Establish IEEE Web Account Access the IEEE Member Digital Library IEEE Enterprise Access the IEEE Enterprise File Cabinet	

Print Format

Home | Log-out | Journals | Conference Proceedings | Standards | Search by Author | Basic Search | Advanced Search | Join IEEE | Web Account |
New this week | OPAC Linking Information | Your Feedback | Technical Support | Email Alerting | No Robots Please | Release Notes | IEEE Online
Publications | Help | FAQ | Terms | Back to Top

Copyright © 2004 IEEE — All rights reserved

h eee e eee g e ch e ch e e c e h e c b

Membership Publications/Services Standards Conferences Careers/Jobs



	KPIOP®	Welcome United States Patent and Trade	mark Office
Help FAQ Terms IEE	E Peer Review Qui	ick Links	» I
Welcome to IIII Aplace			Help
O- Home	Try our New Full	I-text Search Prototype ©	
O- What Can I Access?			
O- Log-out	•	one or more text boxes. search for each keyword.	Search Options: Select publication types:
Tebles of Contents -	3) Select search opera	tors when using multiple keywords. selecting Search Options.	☑ IEEE Journals
O- Journals & Magazines	5) Click Search. See Se	earch Examples	✓ IEE Journals✓ IEEE Conference proceedings
Conference Proceedings	camera <phrase> c</phrase>	calil In: All Fields	IEE Conference proceedings
O- Standards	And 🖫		IEEE Standards
Second * * *	tu	In: Author	Select years to search:
O- By Author O- Basic	And 🖫		From year: 1950 🕝 to 2002
O- Advanced		In: All Fields	Organize search results by:
O- CrossRef	Search		Sort by: Relevance Sort by: Relevance order
O- Join IEEE O- Establish IEEE Web Account	Note: This function re keyword(s).	turns plural and suffixed forms of the	List 15 Results per page
O- Access the IEEE Member Digital Library			
Access the IEEE Enterprise File Cabinet			

Home | Log-out | Journals | Conference Proceedings | Standards | Search by Author | Basic Search | Advanced Search | Join IEEE | Web Account |
New this week | OPAC Linking Information | Your Feedback | Technical Support | Email Alerting | No Robots Please | Release Notes | IEEE Online
Publications | Help | FAQ | Terms | Back to Top



Membership Publica	ations/Services Standards Conferences Careers/Jobs					
IEEE)	Welcome United States Patent and Trademark Office					
Help FAQ Terms IEE	E Peer Review Quick Links Se:					
Welcome to IEEE Xplore* - Home - What Can I Access?	Your search matched 2 of 1088345 documents. A maximum of 500 results are displayed, 15 to a page, sorted by Relevance Descending order.					
O- Log-out	Refine This Search:					
Tables of Contents	You may refine your search by editing the current search expression or enterinew one in the text box.					
O- Journals & Magazines	camera <phrase> calibration<and> (tu<in>au)</in></and></phrase>					
Conference Proceedings	\square Check to search within this result set					
O- Standards	Results Key: JNL = Journal or Magazine CNF = Conference STD = Standard					
Search * * *						
O- By Author O- Basic O- Advanced O- CrossRef	1 Geometric camera calibration: theory and experiments Kachi, D.; Tu, X.W.; Industrial Electronics, 1994. Symposium Proceedings, ISIE '94., 1994 IEEE International Symposium on , 25-27 May 1994 Pages: 298 - 303					
Member Services *	[Abstract] [PDF Full-Text (320 KB)] IEEE CNF					
- Solil IEEE - Establish IEEE - Web Account - Access the - IEEE Member - Digital Library	2 CCD camera model and its physical characteristics consideration in calibration task the robotics Tu, XW.; Dubuisson, B.; Robot and Human Communication, 1992. Proceedings., IEEE International Workshop on , 1-3 Sept. 1992 Pages:75 - 77					
O- Access the IEEE Enterprise	[Abstract] [PDF Full-Text (256 KB)] IEEE CNF					

Print Format

File Cabinet

Home | Log-out | Journals | Conference Proceedings | Standards | Search by Author | Basic Search | Advanced Search | Join IEEE | Web Account |
New this week | OPAC Linking Information | Your Feedback | Technical Support | Email Alerting | No Robots Please | Release Notes | IEEE Online
Publications | Help | FAQ | Terms | Back to Top

Copyright © 2004 IEEE — All rights reserved

h eee e eee g e ch e ch e c e h e c

Dialeg	DataS	itar _©						
options	logoff	feedback	help					• • •
				databases	easy search			
		Adva	nced S	earch: INS	SPEC - 196	9 to date (INZ	Z)	

Search history:

No.	Database	Search term Info added since Results		·	
1	INZZ	Geometric ADJ camera ADJ calibration ADJ theory AND experiments	unrestricted	1	show titles
2	INZZ	camera ADJ calibration	unrestricted	1148	show titles
3	INZZ	flat ADJ surface	unrestricted	2961	show titles
4	INZZ	(point OR focus) ADJ light	unrestricted	605	show titles
5	INZZ	2 AND moving ADJ 4	unrestricted	0	-
6	INZZ	camera ADJ relative ADJ position	unrestricted	3	show titles
7	INZZ	2 AND 6	unrestricted	0	-
8	INZZ	moving ADJ 4 ADJ 3	unrestricted	0	-

hide | delete all search steps... | delete individual search steps...

Enter your search term(s): <u>Search tips</u>		
	whole document	
Information added since: or: none (YYYYMMDD)		search

Select special search terms from the following list(s):

Classification codes A: Physics, 0-1

Classification codes A: Physics, 2-3

Classification codes A: Physics, 4-5

Classification codes A: Physics, 6

Classification codes A: Physics, 7

Classification codes A: Physics, 8

Classification codes A: Physics, 9

h

Classification codes B: Electrical & Electronics, 0-5

Classification codes B: Electrical & Electronics, 6-9

Classification codes C: Computer & Control

eb c b cb e e

- Classification codes D: Information Technology
- Classification codes E: Manufacturing & Production
- Treatment codes
- INSPEC sub-file
- Publication types

h

♦ Language of publication

Top - News & FAQS - Dialog

© 2004 Dialog